

The background of the slide features a large, faint watermark of the University of Delaware seal. The seal is circular and contains a shield with the words 'GRAMM', 'PHILOSOPHIA', 'RHETORICA', 'ETHICA' on the left and 'METAPHYSICA', 'LOGICA', 'MATHEMATICA', 'PHYSICA' on the right. Below the shield is the year '1743'. The outer ring of the seal contains the text 'UNIVERSITY OF DELAWARE' and 'EST. 1743'.

Biosafety and Biological Research at the University of Delaware

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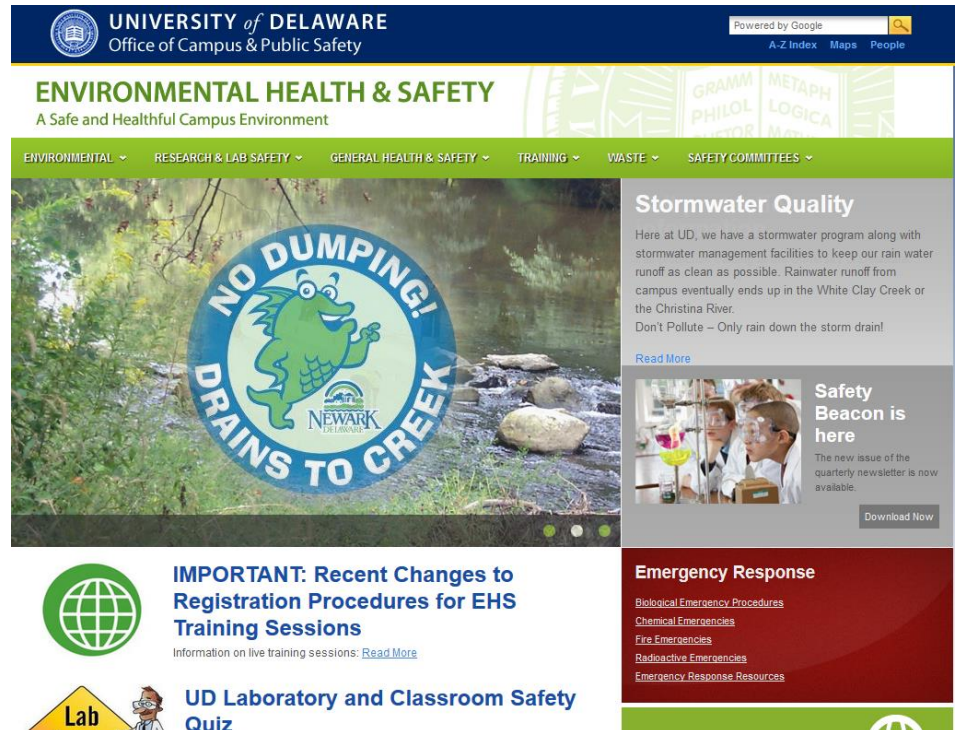
Environmental Health and Safety

May 14, 2015



Topics

- Environmental Health & Safety Department
- Biosafety Program
- Biological Research at UD



The screenshot shows the website for the University of Delaware Office of Campus & Public Safety. The header includes the university logo and name, a search bar, and navigation links for A-Z Index, Maps, and People. The main content area is titled "ENVIRONMENTAL HEALTH & SAFETY" with the tagline "A Safe and Healthful Campus Environment". Below this is a green navigation bar with links for ENVIRONMENTAL, RESEARCH & LAB SAFETY, GENERAL HEALTH & SAFETY, TRAINING, WASTE, and SAFETY COMMITTEES. The main content area features a large image of a stream with a "NO DUMPING! DRAINS TO CREEK" sign, a "Stormwater Quality" section with text about rainwater runoff, a "Safety Beacon is here" section with a photo of students, and an "Emergency Response" section with links to various emergency procedures. At the bottom, there is a section for "IMPORTANT: Recent Changes to Registration Procedures for EHS Training Sessions" and a "UD Laboratory and Classroom Safety Quiz" link.

UNIVERSITY of DELAWARE
Office of Campus & Public Safety

Powered by Google
A-Z Index Maps People

ENVIRONMENTAL HEALTH & SAFETY
A Safe and Healthful Campus Environment

ENVIRONMENTAL RESEARCH & LAB SAFETY GENERAL HEALTH & SAFETY TRAINING WASTE SAFETY COMMITTEES

Stormwater Quality
Here at UD, we have a stormwater program along with stormwater management facilities to keep our rain water runoff as clean as possible. Rainwater runoff from campus eventually ends up in the White Clay Creek or the Christina River.
Don't Pollute – Only rain down the storm drain!
[Read More](#)

Safety Beacon is here
The new issue of the quarterly newsletter is now available.
[Download Now](#)

Emergency Response
[Biological Emergency Procedures](#)
[Chemical Emergencies](#)
[Fire Emergencies](#)
[Radioactive Emergencies](#)
[Emergency Response Resources](#)

IMPORTANT: Recent Changes to Registration Procedures for EHS Training Sessions
Information on live training sessions: [Read More](#)

UD Laboratory and Classroom Safety Quiz

Environmental Health & Safety

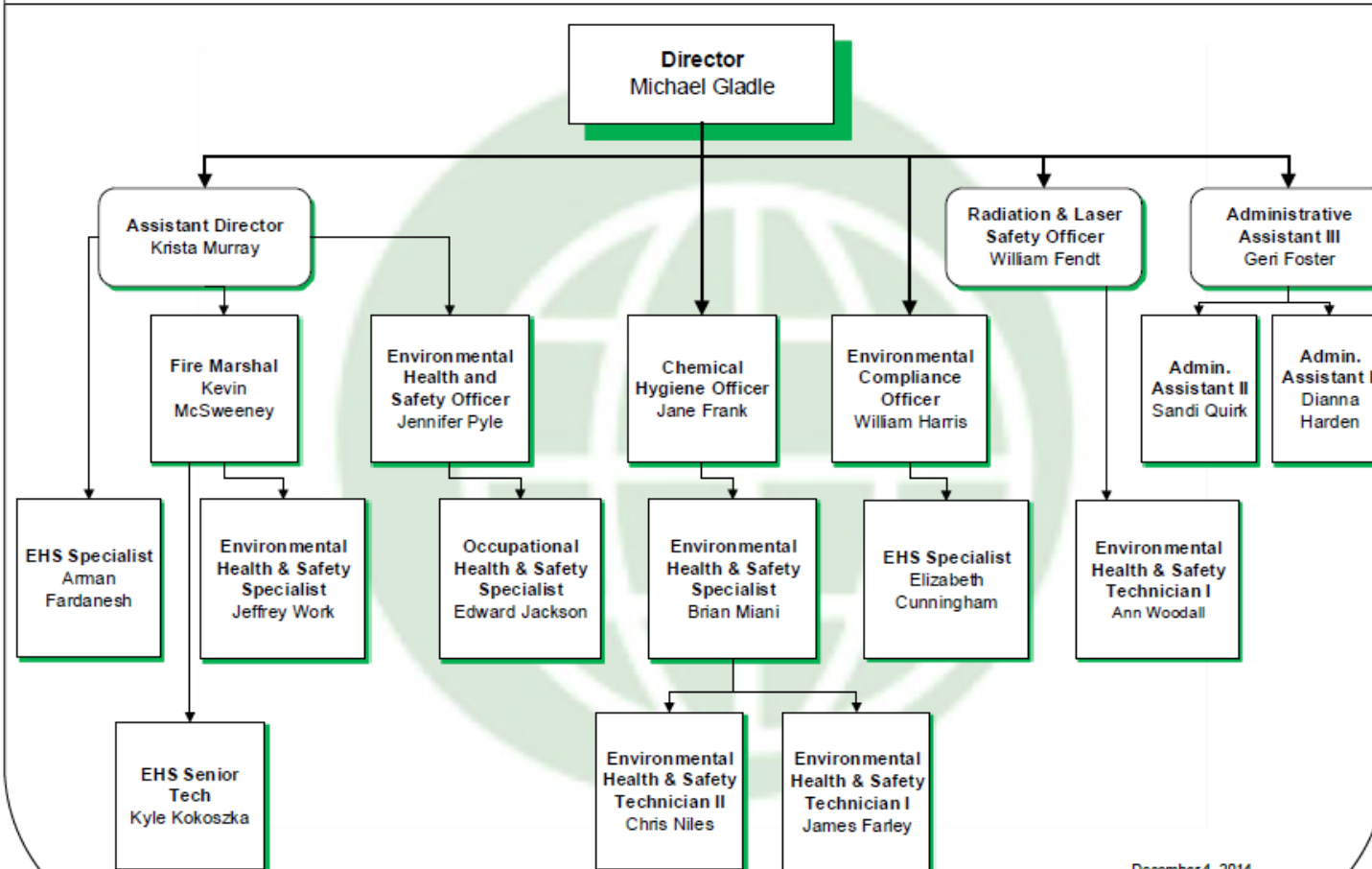
- 19 staff members and 1 student intern
- Oversee all campuses- Newark, Lewes, Georgetown, Wilmington, Dover
- Responsible for the safety and compliance for all faculty, staff, and students working for or attending UD programs

EHS Programs

- Research Safety
 - Chemical hygiene, biosafety, radiation, lasers, waste management
- Fire/Life safety
 - Fire safety, confined space, fall protection, injury/illness investigation, industrial hygiene
- Environmental compliance
 - Stormwater, air permitting, storage tanks, asbestos, lead

Environmental Health and Safety

Organizational Chart



Biosafety Program

- 2 staff members for the program
- University Biosafety Committee to provide oversight and meet regulatory compliance. Composed of faculty working with biologicals on campus. Registered with NIH OBA
- Registered Select Agent program through the USDA

Included Programs

- Biological Research
- Recombinant DNA research
- OSHA Bloodborne Pathogens Program
- Select Agent program
- Infectious waste program
- Laminar flow equipment



Included Programs

- Autoclave inventory
- USDA/CDC permits
- Spill responses
- Biological exposure assessments
- AHA Training Center for CPR and management of AED program



Support to Other Safety Programs

- Service on IACUC, AACUC for animal research oversight
- Service on IRB for human subject research
- Emergency response for campus
- Indoor air quality program
- Water quality concerns



Support to Other Safety Programs

- Assistance with outbreak concerns on campus
- Emergency preparedness
- General lab safety program (inspections)



Biological Research

- Work takes place on Newark, Lewes, and Georgetown campuses
- Approximately 150 Principal Investigators and 650 research staff work with biologicals
- Over 1500 individuals included in the bloodborne pathogens program

Bloodborne Pathogens

- Covers employees and students with potential exposure to blood or other potentially infected materials, including human cell lines
- Researchers, student health medical staff, allied health students, UDPD, UDECU, custodial, some maintenance staff, some athletic facility staff

Biosafety Program

- Biological Work in Biology, Chemistry, Geology, Marine Studies, Medical Laboratory Sciences, Physical Therapy, Kinesiology & Applied Physiology, Animal & Food Sciences, Plant & Soil Sciences, Entomology & Wildlife Ecology, Engineering: Biomedical, Chemical, Materials Science, Mechanical

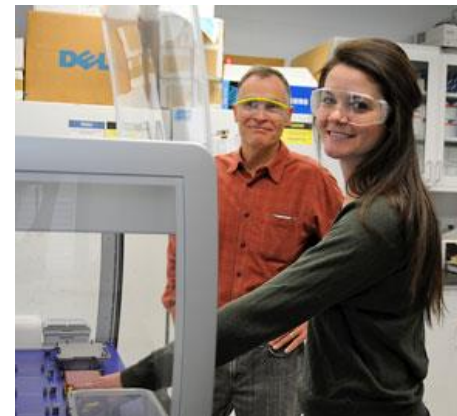
Human Health Research

- Cancer Research
- Pathogens
- Cardiovascular disease
- Drug delivery systems
- Collaborations with Christiana Care, UPenn, Nemours



Marine Research

- Fish research
- Algae research
- Microbial diversity
- Marine plants and animals



Engineering Research

- Engineered tissues
- Tissue mechanics
- Nanoparticle, drug and gene delivery
- Cellular and molecular engineering
- Biodiesel from wastewater treatment
- Wastewater filtration methods



Plant Research

- Plant growth and nutrition
- Disease identification and prevention
- Soil environmental microbiology
- Part of National Plant Diagnostic Network



Animal & Food Science

- Food safety
- Animal nutrition
- Disease prevention/vaccine development
- University farms: cattle, dairy cows, horses, sheep, poultry



Special Facilities

- Animal facility
- 2 Farms
- Greenhouses, with biocontainment areas
- RV Cape Henlopen



Patient Care/ Education

- Nurse Managed Health Center
- Physical Therapy Clinic
- Early Learning Center
- Lab Preschool
- College School



Field Studies

- Work in Belize, Antarctica, Africa, throughout the US



Biosafety Level 3 Facility

- Charles C. Allen Laboratory
- Research labs, animal rooms
- USDA approved
- Poultry research- pathogens and vaccine studies
- Allen Lab and Lasher Lab are part of National Animal Health Laboratory Network (like NBL and RBL labs)



What Makes it a BSL3 Facility?

- HEPA filtration for contained areas
- Pass-through autoclave; autoclaves in labs as well
- Shower-out capability
- Liquid Waste Disposal System
- Formaldehyde decontamination at end of projects
- Pathological incinerator on campus



Airlock door (right) to BSL-3 Lab and Shower/Change (left door) room to Animal Room and BSL-3 Lab.



Shower-In
Shower-Out Room

Separates the Lab and Animal Rooms



BSL-3 Laboratory



BSL - 3 Containment in Glove-port Isolation Units



Necropsy Suite



North Catwalk showing HEPA Filter System



Double HEPA Filter Housing
100 % of Air Filtered Through
High Efficiency Particulate Air Filters (HEPA Filters)



All Liquid Waste Is Autoclaved
Using Steam With Pressure

Lasher Laboratory- Georgetown

- Just renovated
- BSL2 Plus capability
- Necropsy suite
- Perform avian diagnostic testing for state, and screening of flocks before processing
- Food safety research



Select Agent Program

- Since the inception of the federal program
- Registered with the USDA
- Work with 2 avian agents for pathogenicity and vaccine studies
- 1 facility registered; approximately 20 people

SA Program Requirements

- Required to have annual (unannounced) inspections
- FBI clearance for staff
- Physical security; biosecurity; cybersecurity; inventory control “cradle to grave”
- Biosafety and Biosecurity Plans as well as Incident Management Plans

Questions?

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